

1 **Remarks/Arguments:**

2 This amendment is submitted in response to the Office action dated October 6, 2006.
3 Applicants enclose a request for extension of time for two months to and including March 6,
4 2007 by which to respond to the Office action, along with the required extension fee in the
5 amount of \$450 for a large entity.

6 Claims 1-4, as filed, have been rejected for obviousness over the Robinson, Grann and
7 Butrie et al references.

8 By this amendment, claims 1-4 have been canceled and new claims 5 and 6 have been
9 added. The undersigned submits that new claims 5 and 6 are patentable and allowable over
10 any combination of references cited for the following reasons.

11 A primary difference between the present invention and the Robinson reference is that,
12 for a given number of transmitters and receivers in a given transceiver, the Robinson
13 reference requires the use of twice as many different and unique wavelengths than does the
14 present invention. For example, Robinson describes the embodiment shown in Fig. 1 of his
15 patent as follows, see column 3, lines 14-15, and column 3, lines 21-23:

16 "****Each West-East transmitter receiver pair operates on a unique
wavelength.***"

17 "****the East-West wavelengths are grouped into a second band of
wavelengths that is different from the West-East band of wavelengths.***"

18
19 The above language indicates that for a pair of transceivers, as shown in Fig. 1, utilizing
20 four transmitting lasers and four photodetectors, four separate wavelengths must be utilized.

21 In sharp contrast, the present invention operates with exactly one-half the number of
22 wavelengths for a comparable pair of transceivers as that shown in Fig. 1 of Robinson. As
23 shown most clearly by Figs. 1 and 2 of the present invention and as described in the
24 specification, each individual transceiver of the present invention includes a first transmitter
25 T_1 operating at a specific wavelength λ_1 and a first receiver or photodetector R_1 operating with
26 a filter to operate at the same wavelength λ_1 . The transceiver 110 illustrated in Figs. 1 and 2

1 also includes a second transmitter T_2 operating at a second unique wavelength λ_2 . A
2 second photodetector and filter combination R_2 operates on that same second wavelength
3 λ_2 . The use of only two unique wavelengths in transceiver 110 is significant in that the present
4 invention is capable of operating with much fewer parts than that required by the Robinson
5 reference.

6 A further significant advantage of the present invention over Robinson is that the
7 present invention provides inherent redundancy in each individual transceiver. For example,
8 in the embodiment shown in Fig. 1 of the present application, if the first transmitting laser T_1
9 transmitting a channel of wavelength λ_1 should fail, the laser is turned off (along with the
10 photodetector receiving the second channel of wavelength λ_2) and the second transmitting
11 laser T_2 which transmits the second channel having wavelength λ_2 is turned on as shown in
12 Fig. 2. This aspect of the present invention provides automatic, immediate redundancy, and
13 inherently reduces the cost by eliminating one-half of the wavelengths required by the
14 Robinson reference. These aspects of the present invention are described in the
15 specification, beginning at page 3, line 6, and extending through page 4, line 6.

16 In response to the grounds of rejection stated at page 4, last paragraph of the Office
17 action, the Examiner takes the position that, with the Robinson device, a user can simply turn
18 off one of the transmitters and one photodetector and the remaining transmitters and
19 photodetectors provide redundancy. That "redundancy" is only achieved by the exorbitant cost
20 of providing the equipment necessary to generate four separate wavelengths as opposed to
21 only two separate wavelengths used in the present invention. Cost savings are very significant
22 as these devices are used in more and more cost conscious applications.

23 With respect to the Butrie et al reference, the undersigned submits that reference is
24 primarily concerned with reduction of cross talk in a bi-directional optical transceiver.
25 However, Butrie et al does not teach or suggest a transceiver having the combination of
26 transmitting lasers and receiving photodetectors as taught by the present invention for

1 achieving cost effective bi-directional optical communications while simultaneously providing
2 inherent redundancy of the transceiver.

3 For the above reasons, the undersigned submits that claims 5 and 6 patentably
4 distinguish over any combination of references cited and are in condition for allowance.

5 Favorable action is requested.

6
7 Respectfully submitted,

8 By Bruce H. Johnsonbaugh
9 Bruce H. Johnsonbaugh
10 Reg. No. 24,982
11 Attorney for Applicants
12
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14 ECKHOFF & HOPPE
15 101 Montgomery Street, Suite 2800
16 San Francisco, CA 94104
Telephone: 415-391-7160
9381.101
17
18

19 I hereby certify that this correspondence is
20 being deposited with the United States Postal
21 Service as first class mail in an envelope
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22 _____, Commissioner for Patents,
P.O. Box 1450, Alexandria, VA 22313-1450,
on March 5, 2007

23 Reg. No. 24,982 of Eckhoff & Hoppe

24 Bruce H. Johnsonbaugh
25 March 5, 2007
26 Date